Providing Multipl Concurr nt Access to a Fil Syst m

ABSTRACT OF THE DISCLOSURE

Multiple computers are connected to a data storage unit that includes a file
system, which further includes multiple data entities, including files, directories and the
file system itself. The file system also includes, for each data entity, an owner field for
indicating which computer, if any, has exclusive or shared access to the data entity,
along with a time field for indicating when a lease of the data entity began. When a
computer wants to lease a data entity, the computer uses a disk reservation capability
to temporarily lock the data storage unit, and, if the data entity is not currently leased,
the computer writes its own identification value into the owner field and a current time
into the time field for the data entity, to claim the data entity for a renewable lease
period. If a prior lease of a data entity has expired, another computer may break the
lease and claim ownership for itself.